

IN THE CLAIMS

1. (Currently Amended) A method of constructing and managing an overlay multicast tree on the Internet, the overlay multicast tree including a sender, one or more receivers and one or more agents for relaying data, comprising:

~~the first step of a new participant requesting access~~ by a new participant to the overlay multicast tree from a tree manager while transmitting network characteristic information thereof to the tree manager;

~~the second step of determining an optimal parent node in consideration of the network characteristic information of the new participant having requested access at the first step and network characteristic information of agents participating in a currently constructed overlay multicast tree, and transmitting information of the determined parent node to the new participant;~~ and

~~the third step of the new participant establishing data channels~~ of the new participant on the basis of the information of the determined parent node,

wherein the determining the optimal parent node includes searching nodes on the currently constructed overlay multicast tree for any nodes having a same subnet ID as the new participant;

selecting as a parent a node having a minimal tree level or minimal number of child nodes from the nodes having the same subnet ID if at least one node is found to have the same subnet ID as the new participant;

selecting as a parent a node having a minimal tree level or minimal number of child nodes from all the nodes of the overlay multicast tree if no nodes having the same subnet ID as the new participant are found; and

notifying the new participant of the node selected as a parent via a response message.

2. (Currently Amended) The method as set forth in claim 1, further comprising: ~~the fourth step of the agent transmitting information by the agent~~ of child nodes currently held thereby to the tree manager at regular intervals after having accessed the overlay multicast tree ~~through the first, second and third steps~~, and the tree manager collecting the transmitted information of child nodes and checking and managing status of the overlay multicast tree.

3. (Original) The method as set forth in claim 1 or 2, wherein the new participant provides subnet ID information of a network thereof when requesting access to the overlay multicast tree from the tree manager.

4. (Canceled)

5. (Currently Amended) The method as set forth in claim 2, wherein the ~~fourth step~~ transmitting is performed in such a way that each of the nodes having accessed the overlay multicast tree starts a status report timer with a status report interval set, transmits information of child nodes connected thereto to the tree manager when the status report timer reaches the set interval, and restarts the status report timer.